

(A) (17.)

ON A COLLECTION OF DRAGONFLIES MADE BY  
THE MEMBERS OF THE "SKEAT EXPE-  
DITION" IN THE MALAY PENINSULA IN  
1899-1900. BY F. F. LAIDLAW, B.A.

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[*From the* PROCEEDINGS OF THE ZOOLOGICAL SOCIETY OF LONDON,  
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## PART II.<sup>1</sup>

### CœNAGRIONINÆ.

In dealing with the last of the subfamilies represented in this collection, I have attempted as before to give a complete list of species hitherto recorded from the Peninsula. This list will shortly prove to be incomplete, for I have in my hands awaiting examination a fine collection of Odonata, made by Mr. Annandale, who has revisited the Peninsula; and, from a casual inspection of his specimens, it is evident that it includes a number of species which are, if not new to science, at any rate new to the Peninsula. Further, I am informed by Dr. Foerster, to whom I am much indebted for kind assistance and courtesy, that he has recently received a large consignment of Odonata from the same locality, including new and remarkable forms.

I venture to hope, however, that the present list may none the less be of some service.

I take the opportunity of correcting two or three errors, of which I find I have been guilty in the first part of this account.

<sup>1</sup> Part I., see P.Z.S. 1902, i. p. 63.

Firstly, in dealing with the sexual characters of *Tetrathemis*, I was not acquainted with a paper of Dr. Foerster's published in the 'Természetrajki Füzetek' (1900, pp. 81-108), where, in describing two new species of this genus from New Guinea, he calls attention to the peculiar differences between the armature of the femurs of the two sexes. Secondly, he has pointed out in a letter that the forms which I identified as *Gynacantha rosenbergi* Brauer probably do not belong to that species, which does not occur west of Banda. My specimens are perhaps referable to *G. basiguttata*, but I have not had the opportunity of re-examining them.

Lastly, in my description of *Gomphus consobrinus*<sup>1</sup> (P. Z. S. 1902, vol. i. p. 80), "Type A of Selys" should read "Type B of Selys," whilst *Echo tricolor* Krüger, on page 85, should be altered to *E. iricolor* Krüger.

(Species marked with an asterisk are not included in our collection.)

#### Legion LESTES.

##### LESTES RIDLEYI Laidlaw.

*Lestes ridleyi* Laidlaw, P. Z. S. 1902, p. 92.

One male from Gunong Inas.

##### LESTES PRÆMORSA.

*Lestes præmorsa* Kirby, Cat. Odonata, p. 162; Krüger, Stett. ent. Zeit. 1898, p. 130.

A number of specimens from Kwala Aring.

Concerning this species, I find the following notes in my diary:— Aug. 20th (1899): "I found to-day large numbers of a species of Dragonfly over a pond; I caught several pairs."

Aug. 28th (1899): "I noticed that the species which I had seen so abundantly near the pond had disappeared almost entirely. I have only found it in this one spot."

#### Legion PODAGRION.

##### \*PODOLESTES ORIENTALIS Selys.

*Podolestes orientalis* Kirby, Cat. Odonata, p. 126; Krüger, Stett. ent. Zeit. 1899, p. 98.

Recorded from Malacca.

##### \*AMPHILESTES MACROCEPHALA Selys.

Malacca.

##### AMPHILESTES MIMA Karsch.

*Amphilestes mima* Karsch, Ent. Nachr. xvii. (1891) p. 242; Krüger, Stett. ent. Zeit. 1898, p. 100.

<sup>1</sup> Mr. Calvert has pointed out to me, since this paper was read, that this name is pre-occupied by *Gomphus consobrinus* Walsh = *G. externa* Selys (see Kirby, Cat. Odonata, p. 66). Accordingly, I propose to alter the name to *G. kelantanensis*.

A very beautiful and striking species. I believe that the female has not as yet been described; it differs markedly from the male and is fully as brightly coloured. I append a short description of it:—

♀. Head, prothorax, and thorax nearly as in the male, the yellow rather less vivid, and the black stripes on the upper lip and epistome continuous with the black markings near the base of the antennæ.

The abdomen is chestnut-brown above, but the first segment is yellowish green. Segments 2–6 each with a black apical ring feebly developed on the second segment. Immediately before the apical ring there is on each of these segments a dorsal yellowish-green mark, extending forward in 2–3 for about one-half, and in 4–6 for about one-third, of the total length of the segment. This mark is divided longitudinally in each segment by a thin brown line on the mid-dorsal carina.

In segments 3–6 the black apical ring sends forward on either side of the segment a black line, extending nearly the whole length of the segment.

In the seventh segment the anterior half is black, and the yellowish-green marking here is divided into two parts, well separated from each other and diverging posteriorly, the space between them being occupied by a triangular extension forward from the apical ring, which also sends forward, as in the preceding segments, a lateral mark on either side. Segment 8 is black dorsally, with a yellowish-green band either side, and beyond these again black lateral lines. Segments 9–10 are black, 9 with a small and 10 with a minute pair of yellowish spots. Under surfaces yellowish brown. Appendages short, yellow, with black tips.

Length of abdomen 30 mm., of hind wing 24 mm.

Several pairs from a stream near Kwala Aring.

#### Legion PROTONEURA.

##### PROTOSTICTA FOERSTERI, sp. n.

One female from Gunong Inas, Perak.

Lower lip rounded, with short lobes. A small supplementary basal postcostal nerve present, lying at a level between the base of the wings and the first antenodal costal nerve. Pterostigma trapezoid, dark brown in colour, surmounting a single cell, its anterior margin shorter than its posterior; followed by a single row of cells. Sectors of the areculus united from their commencement for a short distance. Upper sector of the quadrilateral ending against the hind margin of the fore wing at the level of the first postnodal costal nerve; that of the hind wing one cell lower. *No trace of the lower sector of the quadrilateral.* The median sector starts from the nodal vein, the subnodal a little beyond it.

Head black; upper lip and rhinaria bluish white, the former with a black margin; antennæ yellowish.

Prothorax dull yellow, a pair of black spots on either side of the mid-dorsal line on the median and posterior lobes.

Thorax bronze-black above, sides dull brownish yellow, with an indistinct black line along the second lateral suture.

Abdomen black, segments 3-7 with a pale yellow basal ring.

Hinder dorsal half of segment 9 yellow. Segments 2-6 with an indistinct wide yellowish-brown ring lying behind the middle of each segment, save in segment 2 where it occupies the greater part of the segment.

Appendages black.

Legs yellow with long yellow spines, 6-7 pairs of these on the third pair of tibias, directed almost laterally.

Length of hind wing 17.5 mm., of abdomen 30 mm.

This species is the smallest member of its genus. It is of interest geographically, as the other species are recorded from the Celebes and Philippines. It is also of interest because, having its median and subnodal sectors arranged as in those species, it tends to prove that the genus is a natural one and not derived polyphyletically from *Platysticta*.

\***PLATYSTICTA QUADRATA** Selys.

Singapore.

\***DISPARONEURA ANALIS** Selys.

Sumatra. Malacca.

\***D. INTERRUPTA** Selys.

Sumatra. Banca. Singapore.

**D. HUMERALIS** Selys.

*Disparoneura humeralis* Kirby Cat. Odonata, p. 134.

2 ♂, 1 ♀ from Kwala Aring.

In one of the males there is no trace of the lower sector of the quadrilateral on the hinder wings.

♀. Pterostigmata nearly black, paler round the edges. Upper lip and genae yellowish brown; a stripe of the same colour runs across the vertex. The prothorax has a pair of lateral yellow marks continuous with antehumeral lines of the same colour on the thorax.

Abdomen with the mid-dorsal crest of segments 2-3 yellow. 3-6 with a pair of small lateral yellowish-white spots at their bases. All these markings are on a black ground.

**DISPARONEURA COLLARIS** Selys.

A single male from Kwala Aring.

**CACONEURA GRACILLIMA** (Selys) ?

A single male from Kwala Aring, very immature, shrivelled, and without segments 7-10 of the abdomen.

No supplementary basal postcostal nerve. Lower lip with short, rounded lobes. Lower sector of quadrilateral entirely absent.

Very slender body. Basal postcostal nerve lying between the level of the two costal antenodal nerves. Upper sector of the quadrilateral of the fore wings not reaching to the first transverse nerve after the quadrilateral; in the hind wing it extends one cell further. 14 postcostal nerves on the fore wing.

Certainly closely allied to *C. gracillima* as described by de Selys, but with the following points of difference:—Upper lip entirely black. Segments 2, 3 of abdomen without a pale dorsal stripe.

*C. gracillima* is said by Selys to come probably from the Celebes or possibly from Borneo. Krüger (Stett. ent. Zeit. 1898) remarks that the species known hitherto belonging to the "gracillima" section of the genus all came from Borneo. He describes a new species belonging to this section from Sumatra. The present specimen is in all probability a representative form of *C. gracillima*, and when better known will most likely require naming as a distinct species.

#### Legion PLATYCNEMIS.

##### \*TRICHOCNEMIS MEMBRANIPES (Rambur).

Singapore. Malacca.

##### \*TRICHOCNEMIS OCTOGESIMA Selys.

Singapore.

##### TRICHOCNEMIS BORNEENSIS Selys.

*Caliccia borneensis* Kirby, Cat. Odonata, p. 128.

1 ♂, 4 ♀ from Kwala Aring belong, I believe, to this species. Mr. Annandale's collection includes a fine series of insects belonging to this genus; accordingly I prefer to leave these specimens without comment for the present.

##### \*COPERA VITTATA (Selys).

Malacca.

##### COPERA MARGINIPES (Ramb.).

*Copera marginipes* Kirby, Cat. Odonata, p. 129.

*Psilocnemis marginipes* Krüger, Stett. ent. Zeit. 1898, p. 101.

Four males and a female from Kwala Aring, Sept. 1899.

These agree closely with Selys's description, but the males have the epistome and genae largely yellow. The posterior pair of tibias of the males are strongly dilated, and the upper anal appendages are only one-fourth the length of the lower pair.

## COPERA ATOMARIA (Selys).

*Copera atomaria* Kirby, Cat. Odonata, p. 129.

Three females and a male, all immature, from Kwala Aring, in September.

The upper anal appendages of the male are fully one-half the length of the lower pair. The second pair of tibias are not dilated, the third pair are unfortunately lost.

LEGION CŒNAGRION. (*Agrion* of Selys.)

## PERICNEMIS STICTICA Selys.

*Pericnemis stictica* Kirby, Cat. Odonata, p. 158 ; Krüger, Stett. ent. Zeit. 1898, p. 125.

One male from the foot of Gunong Inas.

Length of abdomen (without appendages) ...	55	mm.
"      hind wing .....	32.5	"
"      appendages (upper pair).....	1	"

This species is one of the largest and in some respects the most remarkable member of the "legion." It has previously been recorded from Java and Sumatra, but apparently the appendages of the male have not hitherto been described. These, it will be seen, bear a closer resemblance to those of species belonging to the genus *Amphicnemis* than to those of species of *Teinobasis*.

The most striking peculiarity of the species, apart from its large size and extremely slender proportions, is the pentagonal shape of the pterostigma, most marked in the fore wing. The pterostigma is brownish black with a lighter margin, the whole surrounded by a thick black nerve.

Another remarkable feature is the curious "horn" curving upwards and a little forward from the middle of the hinder margin of the prothorax.

The upper pair of appendages of the male are rather slender ; they curve inwards and a little downwards. They are black at the base, but for the greater part of their length dull yellow. Each bears rather beyond its middle a small tooth on its upper inner surface.

The lower pairs are shorter and much slenderer ; they run nearly straight back, converging slightly. Each at its extremity meets the extremity of the upper appendage of its own side. Coloration similar to that of the upper pair. Both pairs are black at the tip.

## TEINOBASIS KIRBYI, sp. n.

A single male, unfortunately much damaged, from Gunong Inas. As it is quite distinct from any described species, it is well, I think, to describe it in spite of its mutilated condition.

Length of hind wings 25 mm.

Wings petiolated to the level of the commencement of the quadrilateral. Claws smooth, without teeth. Inner margin of

the pterostigma more oblique than the outer. Pterostigma black, with pale margin, enclosed by a very thick black nerve. Median and subnodal sectors united by a common stalk from their origin as far as the first transverse nerve they encounter (on the right fore wing beyond it for a short distance). Posterior tibias with four pairs of black spines.

Upper surface of the head dark green, upper lip dull bronze, nasus black, antennae brown, postocular surface dirty white. Prothorax dull brown, dorsal surface of thorax bronze-green, sides and under surface greyish white, pruinose.

Abdomen (segments 1-7 only) bronze-black above, dull dark brown below.

Allied to *T. superba* from the Celebes and Moluccas. It differs in details of coloration and in having only four spines on the posterior tibias.

\**TEINOBASIS RUFICOLLIS* (Selys).

\**ARCHIBASIS MELANOCYANA* (Selys).

*ARGIOCNEVIS RUBEOLA* Selys.

*Argiocnemis rubeola* Kirby, Cat. Odonata, p. 153.

*Race sumatrana* ? Krüger, Stett. ent. Zeit. 1898, p. 126.

1 ♂ from Khota Baru, Kelantan.

*ARGIOCNEVIS NIGRICANS* Selys ?

*Argiocnemis nigricans* Kirby, Cat. Odonata, p. 158; Krüger, Stett. ent. Zeit. 1898, p. 126.

4 ♂, 1 ♀ from Khota Baru, Kelantan.

Like Krüger's specimen, mine are rather larger than Selys's.

Length of hind wing, ♂ 15, ♀ 16 mm.

abdomen, ♂ 27, ♀ 26 "

Postnodal nerves from 9 to 18 on the fore wing. The middle lobe of the prothorax rather truncate, not rounded.

The males differ from Selys's description in having segments 8-9 of the abdomen of a dull-brown colour (probably blue in the living insect), whereas in the male described by Selys there is a trilobed blue mark on the eighth segment. Otherwise the agreement is fairly close. It should be remarked, however, that the colour-pattern of my four male specimens shows no variation. The female is exactly like that described by Selys as the female of *A. nigricans*. I am disposed to think that the female described by Selys as belonging to *nigricans* did not belong to the same species as the male. His measurements suggest this. They are:—

Length of abdomen, ♂ 22, ♀ 25-28 mm.

hind wing, ♂ 15, ♀ 17-19 "

If I am right, then, in taking this view, it follows that the female of the true *A. nigricans* is as yet unknown, whilst my specimens belong to a distinct species, differing from *A. nigricans*,

so far as the male is concerned, in being somewhat larger, in having segments 8-9 of the abdomen blue or brownish blue, and in addition having a black epistome, and no black carina on segment 1.

It is, however, scarcely advisable to name this supposed new species until definite evidence as to the female of the typical *A. nigricans* is forthcoming.

See also Selys, Ann. Mus. Gen. (2) x. 1890, and Ris, Arch. f. Naturg., Jahr. 66, Bd. i. p. 200.

\*AGRIOCNEMIS MINIMA Selys.

*Agriocnemis minima* Kirby, Cat. Odonata, p. 151; Krüger, Stett. ent. Zeit. 1898, p. 126.

Collected by Dohrn in Penang.

AGRIOCNEMIS INCISA Hagen.

*Agriocnemis feminina* Kirby, Cat. Odonata, p. 158.

*Agriocnemis incisa* Krüger, Stett. ent. Zeit. 1898, p. 127; Ris, Arch. f. Naturg., Jahr. 66, Bd. i. p. 200, pl. x. fig. 19 (1900).

Two males and a female of the orange variety from Khota Baru, Kelantan.

The rose-colour of the latter only extends to the fifth abdominal segment.

AGRIOCNEMIS PULVERULANS Selys.

*Agriocnemis pulverulans* Kirby, Cat. Odonata, p. 158; Krüger, Stett. ent. Zeit. 1898, p. 127.

4 ♂ from Khota Baru, Kelantan.

The members of the above genus are the smallest known Odonates. The length of the hind wing of a male of *A. incisa* is 9 mm. and of the abdomen 16 mm. Both this and the preceding genus (*Argiocnemis*), as well as the two following, are found, so far as my experience goes, chiefly in cultivated low-lying land near the coast. Certainly I never saw specimens of any of them "up-country," whilst in the big rice-fields about Kelantan and Tringganu they are the only Cœnagrions that are at all abundant.

\*ONYCHARGIA ATROCYANA Selys.

Singapore.

\*ONYCHARGIA VITTIGERA Selys.

Singapore.

PSEUDAGRION MICROCEPHALUM Ramb.

*Pseudagrion microcephalum* Kirby, Cat. Odonata, p. 153.

3 ♂ from Tringganu.

CERIAGRION CERINORUBELLUM (Brauer).

Penang. Sumatra. Ceylon.

## CERIAGRION ERUBESCENS Selys.

*Ceriagrion erubescens* Krüger, Stett. ent. Zeit. 1898, p. 127.

*Ceriagrion coromandelianum*, race *erubescens* Selys, Ann. Mus. Gen. (2) x. 1890.

3 ♂, 1 ♀ from Khota Baru, Kelantan. Recorded from Sumatra and Burmah.

